

Patent Claims

- 5 Self-tapping screw (1), whose threads in a rear area (5) (facing the head)
have a substantially cylindrical external diameter and, in a front area (4) (fa-
cing away from the head), extend with an external diameter which decreases
towards the end of the screw, **characterized in that**, both in the rear area
(5) and in the front area (4), the threads have an asymmetrical cross section
10 with a bisector (9) of the flank angle (α, γ), measured at the thread tips (13),
which is located obliquely with respect to the axial course of the core (10)
and which reverses from the rear area (5) (first cross section) towards the
front area (4) (second cross section), the bisector (9) in the front area (4)
being inclined towards the screw head (2), and the reversal point (6) of the
15 thread cross section being placed such that the first cross section is substan-
tially present in the rear area (5), the second cross section substantially in
the front area (4).
- 20 2. Screw according to Claim 1, characterized in that the bisector (9) in both
areas (4, 5) is inclined at about 82° to the axial course of the core (10).
- 25 3. Screw according to Claim 1 or 2, characterized in that the reversal point (6)
of the thread cross section is located at the transition from the rear area (5)
to the front area (4).
4. Screw according to Claim 1 or 2, characterized in that the reversal point (6)
of the thread cross section is located in front of the transition from the rear
area (5) to the front area (4).

5. Screw according to Claim 1 or 2, characterized in that the reversal point (6) is located behind the transition from the rear area (5) to the front area (4).
- 5 6. Screw according to one of Claims 1 to 5, characterized in that the first cross section runs in mirror-image fashion in relation to the second cross section.
7. Screw according to one of Claims 1 to 6, characterized in that both the load flank (12) and the rear flank (11) of the threads run rectilinearly.
- 10 8. Screw according to one of Claims 1 to 6, characterized in that, in the rear area (5), the load flank (12) runs rectilinearly and the rear flank (11) runs from the external diameter to the thread base (14) over a bend (15) to a greater flank angle (δ) and, in the front area (4), the rear flank (11) runs rectilinearly and the load flank (12) runs from the external diameter to the thread base (14) over a bend (15) to a greater flank angle (δ).
- 15 9. Screw according to Claim 8, characterized in that the bend (15) is located at 20% to 15% of the thread height.
- 20 10. Screw according to Claim 8 or 9, characterized in that the flank angle δ of the bent thread flank is approximately 70° in the region between thread base (14) and bend (15) and approximately 45° in the area between bend (15) and thread tip (13).
- 25 11. Screw according to one of Claims 1 to 10, characterized in that the flank angle (α, γ) measured at the thread tips (13) is equal in both areas and is approximately 45° .

12. Screw according to one of Claims 1 to 10, characterized in that the flank angle (α , γ) measured at the thread tips (13) is greater in the front area (4) than in the rear area (5).
- 5 13. Screw according to one of Claims 1 to 12, characterized in that the threads run out to a point in both areas.
- 10 14. Screw according to one of Claims 1 to 13, characterized in that, in the area of the reversal point (6), individual thread tips run with a flat (16) over a circumferential angle of about $>90^\circ$.